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The performance wheel and the small business pyramid: The next generation of performance scorecards

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Keywords
performance, wheel, small, business, pyramid, next, generation, performance, scorecards

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The Performance Wheel and the Small Business Pyramid: The Next Generation of Performance Scorecards

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With the focus on how performance management systems support control, this article provides two 'next-generation' performance scorecards—the Performance Wheel, suitable for most organizations and the Small Business Pyramid, which acknowledges the unique requirements of small business. These new models overcome the "top-down" or "bottom-up" shortcomings of popular systems, incorporate the insights of enterprise control and integrate the importance of mission, strategy, critical success factors and key performance indicators as they apply to any form of organization—small to large, service to manufacturing.

Key words: Performance measurement; Strategic management; Balanced scorecard; Integrated models; Performance measurement.

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1. Introduction

The last twenty years have witnessed both an increased sophistication and application of measurement systems within organizations. One of the earliest of these new models was developed at Wang Corporation in the mid 1980's. Faced with the reality that traditional standard cost-based measurement models could reverse, even eradicate, the improvements gained from new management methods such as just-in-time manufacturing, Lynch and Cross (1991) set out on a path to develop a new approach to performance management—a 'balanced scorecard'.

In its early stages of development, the emphasis of this balanced approach was on integrating financial and non-financial measurements (McNair, Lynch and Cross, 1990). Specifically, the concern focused on the need to have the financial metrics provide the same 'signal' of performance as the non-financial metrics. If cycle time for a product was reduced, reducing the total labor hours required to meet a monthly production target, it was important that the accounting system not issue an 'unfavorable' absorption variance. The result of Lynch and Cross' (1991) work was the recognition that the continuous improvement model would require a shift away from engineered standards to those based on a rolling average of actual performance and incorporating trend reporting (McNair and Mosconi, 1987).

By the early 1990s, when Kaplan and Norton (1992) introduced their version of the balanced scorecard, there was recognition across the field that new management systems required new measurement methods and mentalities. However, this is where the

agreement stopped. For while some models, such as that proposed by Kaplan and Norton (1992), emphasized the need to tie measurements to a well-developed strategy, resulting in a 'top down' model of measurement and control, Lynch and Cross (1991) and others argued for the need to use a 'bottom-up' methodology. To these experts, the goal was to create measurements that reflected strategy but emphasized operational performance.

The 'top down' control perspective has been argued by Parker, (1979) as being problematic with respect to employees due to a perceived lack of incentives that provides 'ownership' and the complex phenomena of goals and rewards. This reinforced by Nørreklit (2000) who describes the BSC as hierarchical and top-down which disregards the motivational aspirations of employees and the need to develop *internal commiyment.*

Whether 'top-down' or 'bottom-up' in nature, though, these initiatives proved lacking in several ways:

- The models often proved to be a poor fit for small and service organizations. In the former case, the fatal flaw in the balanced scorecard (BSC) approach was the explicit reliance on a well-developed corporate strategy for successful implementation. There is significant empirical proof that a defined strategy is not a given for a small business (Watts *et al.,* (2009).

- They failed to explicitly incorporate value creation in their system of metrics. While the customer domain was recognized as important, no direct external measure of the firm's performance *in the customer's eyes* was incorporated.

- They failed to explicitly define their linkages to other key concepts in performance measurement, such as critical success factors (CSFs) and key performance indicators (KPIs). This oversight unnecessarily created a perception that the BSC was unique, or divorced from, these prior concepts (McNair, 1998).

- They did not explicitly tie in performance rewards to the overall measurement model. Since it has long been recognized that "you get what you measure and reward," this oversight created unsustainable models that often fell into disuse as soon as the "Hawthorne effect" evaporated.

This paper will now address the shortcomings in the performance measurement models, together with the development of a new generation scorecard, for both large and small organizations, through the integration of perspectives, metrics and terminology. A chronology of performance measurement models, shown in Figure 1, provides a brief history of the development of these models.

Figure 1

A Chronology of Performance Measurement Models

Author/s and Model	Description
Epstein and Manzoni (1997) Bourguignon *et al.*, (2004) Pezet, (2009) The *Tableau de Bord*	The concept of the *Tableau de Bord* has been in use, in some way or another since the late nineteenth century. However, it was not until the 1950s that it was formalized as a tool in the service of corporate management. The various *Tableaux de Bord* are not limited to financial indicators, but are developed in the context of the mission and objectives of each unit. This involves translating the units vision and mission into a set of objectives from which key success factors are identified and then into a series of quantitative key performance indicators.
Keegan *et al.*, (1989) *The Performance Measurement Matrix*	The performance measurement matrix categorises measurement as being 'cost' or 'non-cost' and 'internal' or 'external'. Key to the model is the use of the key metric approach and the 'Determine and Decompose method. This involves decomposing departments into functional equivalents and assessing how the departments support the business.
Lynch and Cross, (1991) *The Strategic Measurement and Reporting Technique (SMART) Pyramid*	This also supported the need to include internally and externally focused measures of performance and added the notion of cascading measures down the organisation so that measures at department and work centre level reflect the corporate vision as well as internal and external business objectives.
Fitzgerald et al. (1991) *The Results and Determinants Framework*	This model classified measures into two basic types: those that relate to results (competitiveness, financial performance) and those that focus on the detriments of those results (quality, flexibility, resource utilisation and innovation). A particular strength of the results-determinants framework is that it reflects the concept of causality.
Kaplan and Norton, (1992) *The Balanced Scorecard*	The Balanced Scorecard reflects many of the attributes of other measurement frameworks but links measurement to the organisation's vision. It grew out of the realisation that no single performance indicator can capture the full complexity of an organisation's performance. The balanced scorecard translates the vision of a business into objectives and performance measures in four perspectives: financial, customer, internal-business process and learning and growth.
Brown, (1996) *The Input—Process—Output—Outcome Framework*	This macro process model creates links between five stages in a business process and the measures of their performance. These stages are defined as inputs, processing systems, outputs, outcomes and goals. The model assumes a linear set of relationships between these stages, with each previous factor determining the next.

Kaplan and Norton, (1996) *The Strategic Balanced Scorecard*	The strategic development of the balanced scorecard builds on Kaplan and Norton's 1992 model but incorporates lead and lag indicators which yield two directional cause-and-effect chains. This process implies that strategy is translated into a set of hypotheses about cause and effect. The strategic balanced scorecard is not just a strategic measurement system but also a strategic control system.
Neely *et al.*, (2000) Neely, Adams, and Kennerley (2002) *The Performance Prism*	The performance prism consists of five integrated facets which identify areas for organizations to address: stakeholder satisfaction, strategies, processes, capabilities and stakeholder contribution. The critical and unique aspect of the performance prism is the reorganization of the reciprocal relationship between the stakeholder and the organisation.

2. The Language of Measurement

Measurements have played a vital role in the development of controls systems since the early work by the late Robert Anthony and others. In a seminal work in management control, Roberts (1964; 102) cited in noted:

> *Every organization is a control system. Each has a direction and objectives, whether explicit or implied.*

Following this the point was made continually that, by definition, to use the term 'organisation' implies some form of management control, whether results, action, or personnel-based (Merchant, 1985).

Drucker's (1964; 286) argues that more 'controls' do not equate to more 'control.' Noting the disparity in meaning, he comments:

> *Controls deal with facts, that is, the events of the past. Control deals with expectations, that is, with the future. Controls are analytical and operational, concerned with what was and what is. Control is normative, concerned with what ought to be, with significance rather than meaning.*

Continuing, Drucker (1964; 288–294) suggests that there are four characteristics of controls in business organizations:

1. In business ...measurement ….is subjective and necessity-biased. It changes both the event and the observer if it does not altogether create his perceptions.

2. Because controls have such an impact it is not only important that we select the right ones. To enable controls to give right vision and to become the ground for effective action, the measurements must also be appropriate.

3. Business is an institution of society. It exists to contribute to economy, society, and individual. In consequence, results in business exist only on the outside—in economy, in society, and with the customer. It is the customer only who creates a "profit." Everything inside business only creates costs…Results are always entrepreneurial.

4. Finally…(B)usiness is the only system we know which has both quantifiable and non-quantiable results and events, each equally important.

What do these principles suggest for the design of an effective control system? First it is critical to consider the behavioral impact of controls. Measurements which do not include some form of incentive to reinforce their importance become 'invisible'—they fail to generate action in a reliable, sustainable way. Additionally, what is measured changes events—measurements shift attention to certain aspects of performance, overlooking others.

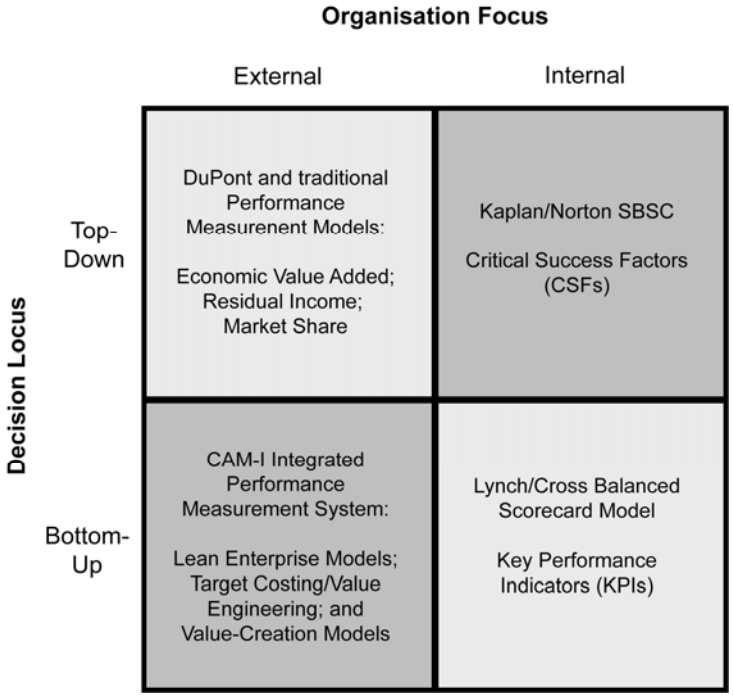
The entire focus of performance measurement models (PMM's) is to ensure that a wide range of events and outcomes are captured in ways useful to decision-makers. However, the question which arises is…which decision-maker? And, equally important, must this decision-maker be intimately familiar with a supposed organisational strategy in order to succeed? The answer to the former helps us sort the PMM's into sub-groups; the latter suggests that strategy may be as simple as the will of an organisation and its members to survive to fight one more day.

As suggested by Figure 2, the extant literature on PMM can be viewed from a simple two-by-two decision perspective. Specifically, the models can be sorted based on

whether they focus on external or internal indicators of success as well as whether they emphasize top-down or bottom-up decision loci.

What is interesting is to overlay some of the traditional language of control on these various models. The Kaplan-Norton model, for example, correlates most closely to the traditional concept of 'critical success factors' (CSF). Embedded in strategy, CSF's target the critical dimensions of performance as defined by the firm's strategy. While the Kaplan-Norton model may assist with strategy implementation (Atkinson, 2006) the same CSF's can often leave the customer perspective out of the equation, relying instead on internally-defined market metrics that may, or may not, capture the value-creation process. Similarly, Lynch and Cross's (1991) version of a PMM emphasizes internally-defined metrics of performance but relies heavily on a 'bottom-up' or process focus in defining its measurements and their relationships.

Figure 2



As attention shifts to the external environment and its definition of success, we encounter both the traditional world of shareholder value measurements and the modern focus on externally-driven performance. The DuPont, Economic Value-Added (EVA) and Market Value-Added (MVA) models of performance measurement place their emphasis on the factors that affect external stakeholders' wealth. They are, by definition, top-down in nature as they deal with the *gestalt*, or the entirety of organizational performance reduced to a few key financial metrics. In sharp contrast, the modern world of lean management and process improvement, as embodied in the CAM-I Integrated Performance Management models, place the customer inside the organisation, calling the shots and defining success.

Four measurement models, four unique perspectives on the concept of 'success', and four forms of control, seeming in juxtaposition and contrast rather than blending into one unified whole. If there are four unique models, then a manager must decide which set of assumptions and methods most adequately capture their world of work—which will most likely lead to sustainable superior performance. Each model, and each proponent, will forcefully argue that their approach will result in success, leaving the practitioner with little more to go on than entrepreneurial instinct and common sense.

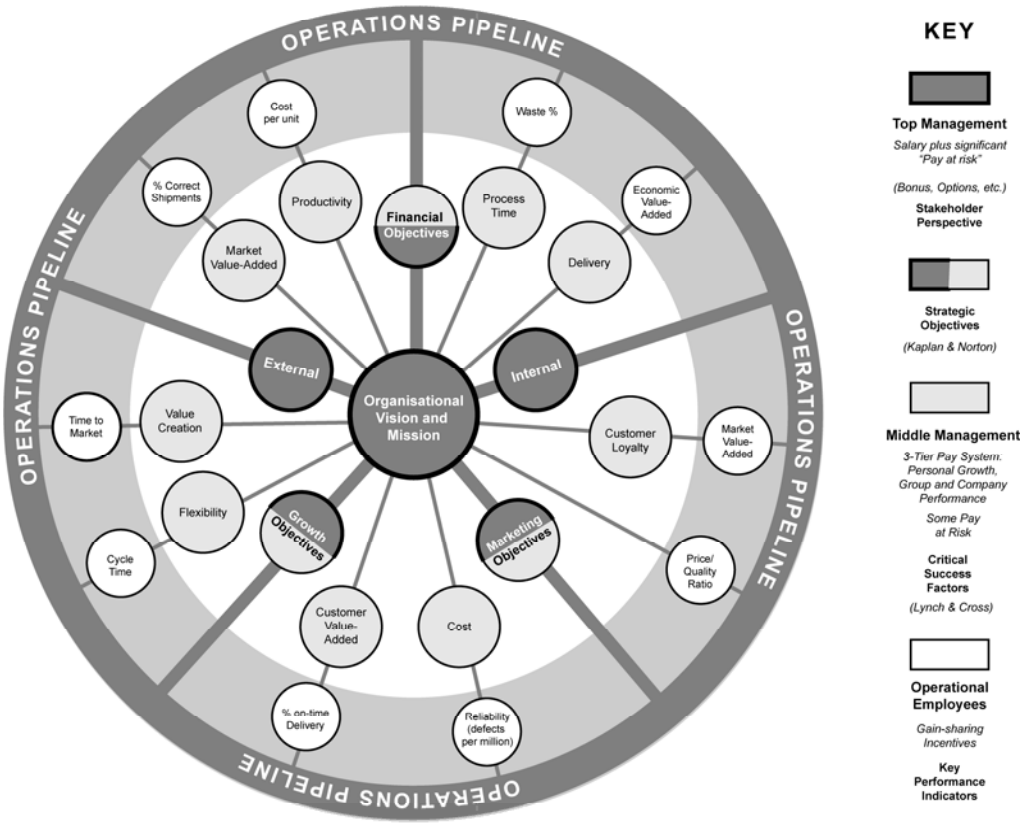
3. The Performance Wheel: One Model—Many Users

Are the various control models actually mutually exclusive, or can they be reduced to one unified model that keeps management's eyes and those of the workers who create the value that customers expect on the same vision? Figure 3, the Performance Wheel, suggests these seemingly different models of control can be reduced

to one overarching model. Building on the work of Lynch and Cross (1991) as well as the model developed by CAM-I, this integrated model combines traditional and modern perspectives on control, both top-down and bottom-up metrics, the internal versus external stakeholder perspective, and finally, the relationship of locus of control (organizational role) with the types of incentives that companies have found to be most useful in creating sustainable performance improvements. It incorporates and remedies the identified weaknesses of each model and provides a comprehensive model of performance management that can be adapted to meet the needs of most organization.

Figure 3

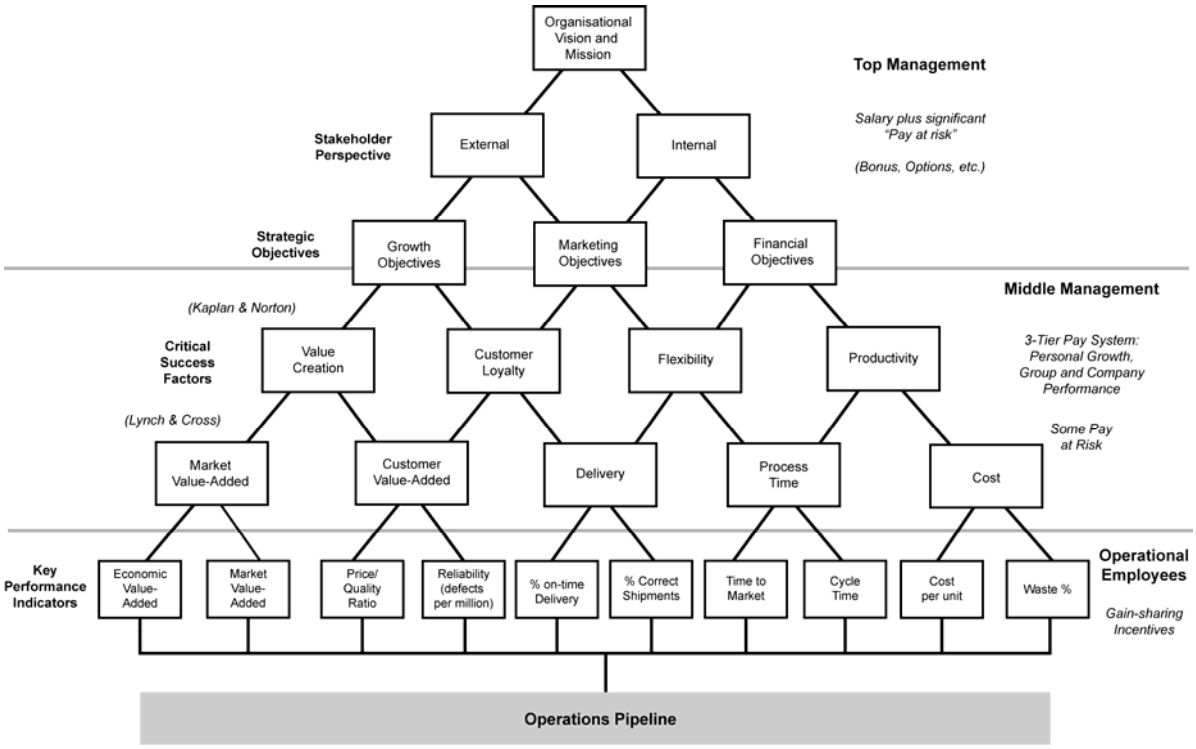
The Performance Wheel



To illustrate the power of this model, if we cut the wheel and lay it out straight (Figure 4), we can examine the key components of the model, the traditional emphasis on vision, mission, strategy, critical success factors (CSF), and key performance indicators (KPI) can be found on the left side of the diagram. Each 'row' of measurement detail incorporates a different level of analysis. Inserted between these traditional measurement constructs are references to the Lynch/Cross and Kaplan/Norton models. Lynch and Cross (1991) built their model at the KPI level, emphasizing process improvements and metrics that would resonate with operational employees. Their four key dimensions of performance were quality, productivity, delivery and cost. The diagram expands these 1980s-based concepts to include more recent work in customer- and market- value added measurements.

Figure 4

The Performance Wheel – Laid Out Straight



(McNair and Watts, 2009)

In their models Kaplan and Norton emphasize metrics at the CSF level. With its clear linkage to strategy, it is easy to see that their concern is with providing a top-down set of metrics that can be deployed by top management to guide middle management decisions and actions. Their four dimensions of performance are innovation/growth, customer, financial, and operational. Once again, the external stakeholder perspective is ignored in the model, creating a critical weakness in the competitive arena. If Drucker is right, this is a fatal flaw in that the only place an organisation exists is 'on the outside.' The Performance Wheel - expanded in Figure 4 adds value creation to the CSF's, thereby creating a linkage to external stakeholders.

On the right side of the diagram the emphasis shifts away from abstract measurement concepts to the organizational structure and related incentive systems. The integrated model is subdivided into three sub-groups: 1) those controlled by top management, 2) those under the purview of middle management, and 3) those that only operational managers and employees can affect. These three divisions coincide with strategic obligations, critical success factors, and key performance indicators found in the traditional control literature (Thomas 1988; Dearden 1988; Stonich 1988)

Added to the measurement and structure logic is a reflection of the most effective forms of incentives. As noted by Stonich (1988: 468-69):

> *…(in many control systems) the necessary performance measurement and reward system that completes the control cycle is often missing…These measurements and rewards should reflect the firm's strategy, but this is not enough, the system must also be consistent with or specifically designed to help modify, certain of the firm's internal characteristics.*

Therefore, the systems must be designed to ensure continual growth, innovation, and improvement. This need is reflected in Figures 3 and 4 by the addition of a growth objective in addition to the marketing and financial objectives that underlie the CAM-I Integrated Performance Measurement system (McNair, *et al.*, 2000). Arrow (1964: 325), commenting on management and control systems notes:

> *Control in the large is concerned with organizational issues and transfer pricing… Control in the small is a question of incentives…rewards should be determined by the amount of gain to the company and nothing else, otherwise it creates an incentive for distortion.*

Based on the early works of organizational control theorists, a failure to include incentives which complete the "control loop" can lead to dysfunctional consequences and poor performance. At the bottom of the organization, these incentives and metrics are best incorporated in a gain-sharing program where workers receive a bonus based on the overall improvement in process performance. By sharing in the gain, line workers are far less likely to become disenchanted with lean or six sigma initiatives (McNair, *et al.*, 1990; McNair, *et al.*, 1989). This could overcome the problem identified by Malmi (2001) who found little evidence that rewards and compensation initiatives incorporated, currently embodied in the BSC provided any benefits.

At middle management, it becomes important to capture key drivers of work performed at this level. For example: 1) they need to be continuously improving their own skills, 2) they have to be able to effectively work with individuals from across the organization, and, 3) they have to be reminded that only when the organization "wins" do they truly meet their goals. By delineating the key metrics used to make the translations between financial and operational goals, the comprehensive model developed in Figure 2 helps eliminate the need for the "omniscient" hinge manager (Euske, Lebas, and McNair 1993) who had the task of linking strategy to operational goals. By tying incentives to corporate performance, at least some part of the middle manager's compensation should become "pay at risk" (Turner 2001).

Finally, at the top level of the organization, the emphasis shifts away from internal operations to attaining strategic objectives and meeting external stakeholder expectations. It can be argued that it is now critical that a major proportion of the executive's compensation consist of "pay at risk" if Arrow's (1964) concerns with control in the small are to be addressed. Closing the control loop at the top level of the organization has to explicitly include external stakeholder needs if it is to be effective (Atkinson 1997; Maskell 1997; Stonich 1988; Drucker 1964).

4. Control in the Very 'Small': The Case of Small Business

The Performance Wheel presented here is, no doubt, a complex model but one that can be easily translated into a more focused, less complex structure. Also, as Arrow (1964) and Drucker (1964) have noted, all results are, by definition, entrepreneurial in nature, it is therefore important to address the last of the four weaknesses identified in the beginning of this article: addressing the needs of small business.

One easy way to describe the translation of the model from large to small organizations would be to simply 'collapse' the middle and top layers of Figure 3 and 4, thereby recognizing that one individual, or a very small team of individuals, are dealing with all of these issues. It is the essence of effective entrepreneurialism that one individual develops a vision, a mode to reach that vision (strategies), and sets operational objectives for their employees. If the model exists, though, why do small businesses consistently appear to lack the very rudiments of formal control? This is the point at which it is important to recognize the fact that controls can be results, action or personnel in nature.

When most individuals speak of control, they are thinking of formal results controls or the highly-specified procedures that make up action controls. In small business, though, this level of formality is seldom needed. The informal control system, shaped by the personality and drive of the entrepreneur, is all that is needed as long as there is mutual trust and respect. Personnel control is, by definition, implicit and informal, but that does not diminish in any way its power to shape behavior. In a small business, then, the only metrics needed by the entrepreneur are key performance indicators which most clearly reflect the basic health and functioning of the organisation. KPI's help the entrepreneur clearly define his or her goals for the organisation and provides the means to use the gain-sharing incentive systems that have proven so powerful in motivating operational performance.

Control in the small, then, becomes one and the same with an effective operational control system with complementary incentives to help individual workers make the decisions and

take the actions that will lead to sustainable growth for the organisation. Control in the small, then, is one of perspective, not purpose, existence, not explicitness.

5. The Small Business Pyramid

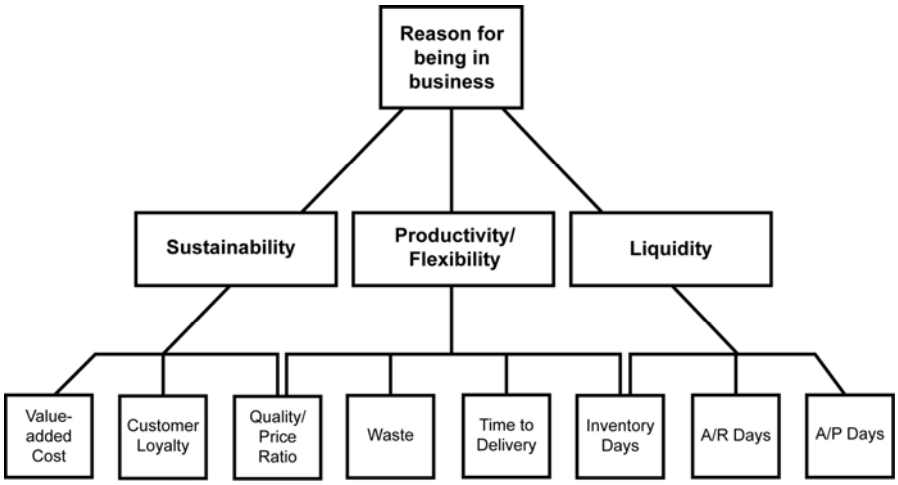
Two primary issues remain with regard to the extant literature in performance measurement. First, outside of the Results and Determinants Framework (RDF) model (Fitzgerald *et al.*, 1991), there is scant evidence of a service-driven performance measurement system. Second, small business issues remain unaddressed. The question this raises is, is there a unique measurement system required for each of the three unaddressed categories, that is., service organizations, small businesses, and small service businesses.

The Performance Wheel also appears to have an advantage over the RDF. It is not starting "from scratch" in terms of development of a measurement prototype or theory—it builds upon 50 plus years of academic and practitioner-driven research and practice. Large service organizations, then, appear to be accommodated within the structure of the Performance Wheel. Success in any competitive venture appears to be driven by the same core system of actions, results and beliefs.

The small manufacturing and small service organizations present a different challenge—to simplify the model yet keep its integrity intact. If the Performance Wheel can be modified for these settings it would provide a basis for tracking growth of organizations based on the complexity and sophistication of their formal measurement system. To determine the robustness of the Performance Wheel, a small business prototype was developed (see Figure 5).

Figure 5

The Performance Measurement Pyramid for Small Business



Note: For service firms with no inventory, the inventory days measure is dropped and the firm's liquidity now depends on time to delivery, A/R days and A/P days and productivity is defined by time to delivery, waste and the quality/price ratio.

To ensure the "fit" to small business the middle of the flattened version of the Performance Wheel (Figure 4) has been collapsed, reflecting the fact that middle management is all but non-existent in small businesses. Removing the middle layer from the model leaves the three primary dimensions noted by many researchers in this area to be key to the survival and growth of a small business (Watts and Preda 2004; Orser, *et al.*, 2000; Meredith 1989). These three dimensions are then expanded to a set of operational measures that allow the small business owner to plan for, and control, the operational pipeline that connects the SB to the customer. The final challenge is to adapt the model to the needs of SSBs. The accommodation of this final requirement simply requires the removal of "inventory days" as a key performance indicator. The remaining concerns—remaining liquid, being flexible, and constantly providing a superior experience to the firm's customers, remain a constant. While these are critical metrics for all organizations, then, the KPIs for small businesses also capture the fact that they excel at meeting

customer needs because the customer is never more than one step removed from the operational pipeline. In small business, value is always created for the customer from the bottom up.

6. Conclusion

The objective of this discussion has been to address the four weaknesses of existing performance measurement systems by developing a comprehensive system that explicitly incorporates the many concerns of existing models and management systems to create a model of control that can be adapted to any organisation, large or small, manufacturing or service-oriented—the Performance Wheel. As s secondary objective the paper was the development of the Small Business Pyramid, acknowledging the fact that all scorecards to-date, including the Performance Wheel do not meet the unique requirements of small business.

However one final issue needs to be attended to. Specifically, should such systems be 'bottom-up' or 'top-down' in nature?

To answer this final question it is important to think through the dynamics and purpose of control systems. Control systems exist first and foremost to direct behavior, secondly to evaluate and reward the results of these actions. Hence while all action needs to be directed to some end, the second element of control systems provides the answer to this controversial issue. Specifically, Dearden (1988; 370–371) notes:

> *Management control is a process by which a manager ascertains that his subordinates are efficiently and effectively accomplishing the organization's objectives…Time span is the length of time that will elapse before a superior can evaluate the discretion used by a subordinate ...Different jobs have different time spans…the longer the time span the more important the job.*

Considering Dearden's (1988) comment, it becomes clear that control must be 'bottom up' if it is to properly incorporate the 'time span' of control. Only by adding this last dimension to the discussion can a final answer be obtained—control exists to direct behavior. Behavior is directed both through the establishment of performance expectations and the *feedback* that is given on

actual performance. Performance measurement as control is present-oriented and upward-integrating. That being said, without some vision of where performance is leading, any measure and any output is equally defensible. When *planning* is done, which is future-oriented, these organizational concerns must be addressed. As suggested by Drucker (1964; 289):

> *"Controls" in a social institution…are both goal setting and value setting. They are not objective…They are of necessity moral. The only way to avoid this is to flood the executive with so many "controls" that the entire system becomes meaningless, becomes mere noise.*

Using a top-down planning approach and a bottom-up control system helps unravel the final 'knot' that has always existed in control systems—the *control paradox*. If individuals set their own goals (e.g., perform the planning activity) they will necessarily be focused not only on tomorrow's plan but also on today's capability—they have an incentive to understate their goals. Performance measures for planning purposes, then, start at the top while measurements for control must, by definition, start from the bottom of the organisation.

In developing this article, it is clear that as much, if not more emphasis was placed on the 'old' writings of the pioneers of control. Perhaps that is the final message embedded in this discussion—pioneers are often the ones who have to deal with both the short-term and long-term implications of their viewpoints and suggestions. The wisdom and experience they bring to a topic is never out of date. In fact, to think that anything 'old' is useless is not only overconfident, it is reckless. Integrating perspectives means more than bridging the gaps in modern articles, it means spanning the life of the underlying theories and practices to ensure that learning moves forward, not back. It means seeking out the most 'elegant' of designs, ones which integrate theory with reality and realistically separate planning from control.

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